



**National  
Transportation  
Safety Board**

**Crash During Test Flight  
Gulfstream GVI (G650)  
Roswell, New Mexico, April 2, 2011**

**Investigator-in-Charge  
presentation**

# History of Flight

- April 2, 2011
- 0934 mountain daylight time
- Experimental Gulfstream G650
- Crashed during takeoff
- Roswell, New Mexico
- Two pilots and two flight test engineers fatally injured

# History of Flight

- Planned one-engine-inoperative continued takeoff
- Flight crew tried to achieve takeoff safety speed ( $V_2$ )
- Stall occurred before stall warning system activated
- Right wing contacted runway



Airplane path





Right wing contact







Main landing gear

Concrete structure

ATC tower

# Investigation Participants

- Federal Aviation Administration
- Gulfstream Aerospace Corporation
- Roswell Fire Department
- Parker Aerospace
- German Federal Bureau of Aircraft Accident Investigation
- Rolls-Royce Deutschland



# Factors Leading to Accident

- Failed to fully investigate two previous uncommanded roll events
- Made persistent attempts to adjust pilot technique to achieve erroneously low  $V_2$
- Used flawed assumption to determine takeoff speeds
- Overestimated in-ground-effect stall angle of attack
- Set stick shaker activation too high



# Factors Leading to Accident

- Failed to establish adequate flight test operating procedures
- Did not adjust flight test schedule to account for program delays
- Failed to develop effective flight test safety management program

# Safety Issues

- Contradictory information about maximum lift coefficient in ground effect
- Effective flight test standard operating policies and procedures
- Flight test-specific safety management system guidance
- Coordination of high-risk test flights





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